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TO HOLDERS OF THE UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
MANUAL OF REFERENCES - MCD-02:

PLEASE FILE THE ATTACHED CONSTRUCTION GRANTS PROGRAM REQUIREMENTS MEMORANDA 77-1, 77-2, 77-3, 77-4, & 77-5 IN SECTION II OF THE MANUAL.

(ALSO ATTACHED IS A REVISED THIRD PAGE FOR THE TABLE OF CONTENTS)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 2 3 1976

CONSTRUCTION GRANTS
Program Requirements Memorandum No. 77-1

SUBJECT: Treatment Works for Recreational Parks, Industrial Parks and Institutions

FROM: John T. Rhett, Deputy Assistant Administrator for Water Program Operations (WH-546)

TO: Regional Administrators I - X

ATTN: Water Division Directors

I. PURPOSE

This memorandum confirms Agency policy on construction grant funding of treatment works which have as their primary or exclusive purpose providing service for recreational parks, industrial parks or institutions such as schools, hospitals, prisons, and nursing homes.

II. DISCUSSION

Applications for grants for wastewater treatment projects for recreational parks, industrial parks, schools and various other institutions have been received in several regions. Regions have asked whether these projects should receive Federal assistance while facility needs and permit conditions for existing communities remain unmet.

It is the policy of this Agency, consistent with P.L. 92-500, to assign highest priority to the provision of grant assistance for wastewater treatment works to reduce pollution from the backlog of existing municipal wastewater discharges. Program Guidance Memorandum (SAM-9) reaffirms this objective, stating that construction grant funds are intended to be used primarily for the abatement of existing pollution rather than for the treatment of expected future wastewater flows. As a means of attaining this objective, the above memorandum requires that the major priority system criterion, "population affected" be defined as that population presently existing within the affected area.

III. RELATIONSHIP TO OTHER REQUIREMENTS

This memorandum is concerned with the preparation of State project priority lists and the Agency's existing policy with respect to the funding of treatment works for recreational parks, industrial parks or

institutions insofar as it concerns the ranking of projects on State project priority lists. This memorandum does not affect the Agency's requirements concerning the eligibility of grantees or the eligibility of projects for the treatment of industrial wastes. The Agency's regulations define eligible grantees, municipalities, in 40 CFR §35.905-14 and indicate that certain grant applicants, such as a school district which does not have as one of its principal responsibilities the treatment, transport, or disposal of liquid wastes, would not be eligible for grant assistance. The Agency's regulations in 40 CFR §35.925-15 state the costs for facilities for the treatment of industrial wastes are not allowable unless the grantee-applicant is required to remove such pollutants from non-industrial sources and the project is included in a waste treatment system with the principal purpose of providing treatment for domestic wastes of an entire area. The Agency may continue to deny grant assistance to such grantee applicants or for such projects irrespective of and independent of its consideration of State project priority lists and review of individual grant applications inconsistent with the Agency's policies regarding priority lists set forth in this memorandum.

IV. POLICY

A. Objectives

Wastewater treatment projects designed to serve proposed recreational parks, industrial parks, and institutions such as schools, hospitals, prisons and nursing homes are not to be grant funded until existing needs for pollution control have been met. Treatment works projects which have as their primary or exclusive purpose providing service for existing parks or institutions are not to be grant funded unless their construction is necessary to alleviate a serious, existing pollution problem and the individual projects are justified by a rigorous case-by-case application of the primary priority system criteria (i.e., the severity of pollution problems, the size of the existing population affected, and the need for the preservation of high quality waters.)

B. State Responsibilities

To achieve the above objectives, EPA will confirm and strengthen its existing policy by requiring states to do the following:

(1) Apply the "existing population affected" criterion rigorously in the preparation of state project priority lists to exclude from fundable ranking treatment works projects which have as their primary or exclusive purpose providing service for proposed recreation parks, industrial parks, and institutions, until projects meeting the criterion have been funded.

(2) Strictly apply the priority criteria cited in the above presentation of EPA's objectives on a case-by-case basis to projects designed to control existing pollution problems created by existing parks and institutions.

(3) Review grant applications, including plans of study and facility plans, for individual projects to further assure compliance with the above priority list requirements.

C. EPA Responsibilities

EPA will confirm and strengthen its existing policy by doing the following:

(1) Exclude any projects failing to comply with the requirements set forth in the prior section concerning a State's responsibilities in the preparation of the State project priority list prior to the approval of the State project priority list.

(2) Review grant applications for individual projects to further assure compliance with the requirements set forth in the prior section concerning a State's responsibility in reviewing individual grant applications and reject any applications failing to meet these requirements. States and grant applicants must continue to recognize that EPA approval of Step 1 funding does not constitute a commitment for the award of Step 2 grant assistance.

V. IMPLEMENTATION

The States are to be advised of the Agency's confirmation and extension of its policy with regard to this subject area at once. The States will be requested to begin immediately to review individual grant applications to implement the requirements set forth above outlining State responsibilities to assure compliance with EPA's policy and to reject non-conforming applications. EPA will continue to confirm and strengthen its existing policy and review individual grant applications to further assure compliance with those requirements. The Regional Administrator, at his discretion, may review existing State project priority lists and will review forthcoming priority lists to bring them into conformance with the above-outlined objectives and the requirements set forth above concerning State responsibilities.

VI. REFERENCES

A. 40 CFR §35.914(c)(1), State Determination of project priority lists; project priority list.

B. Program Guidance Memorandum: SAM-9, State Priority Systems Used in the Development of State Project Priority Lists, September 29, 1975.

C. 40 CFR §35.905-14 Municipality.

D. 40 CFR §35.925-15 Treatment of industrial wastes.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

November 29, 1976

OFFICE OF WATER AND
HAZARDOUS MATERIALS

CONSTRUCTION GRANTS PROGRAM
REQUIREMENTS MEMORANDUM
PRM #77-2

SUBJECT: Grant Eligibility of Start-up Services

FROM: John T. Rhett, Deputy Assistant Administrator for Water Program Operations (WH-546)

TO: Regional Administrators I - X
ATTN: Water Division Directors

PURPOSE: The purpose of this memorandum is to identify specific services, rendered during the start-up period of a new treatment works, that are eligible for grant funding. Such services will help assure that municipal treatment works will achieve operational objectives more rapidly and effectively.

DISSUSSION: In response to a recognized need to place increased emphasis on the effective operation of new waste treatment facilities constructed with Federal grant funds, it has been determined that the cost of certain services provided during the plant start-up period shall be eligible for grant support. Such services are intended to assure that: design operational efficiency is achieved as quickly as possible; process control and related equipment problems are identified and resolved; onsite instruction to personnel in details of the process and equipment of each particular plant is provided, and final revisions to the O&M manual, based upon actual operating experience, are made.

POLICY: This PRM confirms eligibility for start-up services under the following terms and conditions. Start-up services for new wastewater treatment works constructed with contract authority funds are eligible for grant support in accordance with the following guidance.

Grant eligible start-up services will average 90 man-days for most treatment plants. For large or complex plants, however, grant eligible start-up services may range up to 300 man-days. Start-up services shall be completed within a period of twelve months. In addition to grant eligible start-up services, grantees, in most cases, should be encouraged to negotiate separate agreements for technical and training services to identify and solve operational problems beyond the initial start-up period. However, only that period of time which conforms with guidance provided herein will be eligible for grant assistance.

Grant eligible start-up services are limited to those items described below. (Other services proposed for grant eligibility will be considered only on a case-by-case basis by the Regional Administrator.) The extent of such services will depend on the size and complexity of the facility and the capabilities of existing or new operational and management staff. In many cases services to address the potential needs below may be coupled with other related services. To be grant eligible, the services must be rendered by the design engineer or others identified by the design engineer.

1. Pre and post start-up personnel training--i.e., onsite training given plant operation and maintenance personnel on the operation and control of the specific treatment processes of the facility as well as specialized training required for the safe operation and maintenance of plant equipment.

It could also include consultation on the staffing and training plan before completion of construction. Such consultation would be supplemental to the O&M manual and intended to give plant personnel a clear understanding of individualized operational and management responsibilities. Grant eligible training and related consultation are not to be a substitute for routine, entry-level or update operator training, the funding of which is the responsibility of the grantee.

2. Fine tuning to optimize process control--i.e., expert operational assistance for adjustment and "fine tuning" of the treatment processes and related equipment functions to optimize performance, safety and reliability under actual operating conditions. This should include the detailing of operational procedures under both normal and abnormal conditions so as to achieve consistent, reliable, and efficient performance from each process component at all times.

3. Laboratory procedures--i.e., onsite training and instruction to assure that the sampling and laboratory testing program needed for satisfactory process control and regulatory monitoring and reporting are fully understood. Entry-level or update training in basic laboratory testing and procedures for routine analyses are not grant eligible, although training in unique testing requirements related to some unusual unit process or process equipment may be determined to be grant eligible.

4. Maintenance management system--i.e., start-up services to assure effective implementation of the maintenance management system outlined in the facility's O&M manual. Included is training of the operation and maintenance staff in the details of the maintenance management system to establish and maintain a preventive maintenance program.

5. Records management systems--i.e., services to provide the training needed to implement a records management system as outlined in the O&M manual. It will become a major element in the larger and more complex plants that require a refined system to adequately handle records related to process control, effluent quality monitoring and reporting requirements, inventories for chemicals, supplies, and spare parts, etc.

6. Revise O&M manual--i.e., revising the O&M manual based upon actual operating experience obtained during the start-up period. It is not intended to replace the present requirements for drafting and finalizing the O&M manual before plant start-up, but does recognize that some aspects of plant operation and process control can be documented more fully after a period of actual plant operation.

Note that costs normally associated with the operation and maintenance of a municipal wastewater treatment facility, such as salaries for operation and maintenance personnel, chemicals (except for the basic inventory required for start-up), power, etc., are <u>not</u> eligible. Also ineligible are the costs of all <u>off</u>-site formal training/orientation programs. Finally, wet and dry equipment and facility testing is the responsiblity of the contractor under the supervision of the Engineer.

IMPLEMENTATION: Start-up service provisions should normally be submitted as part of a Step 3 grant, and State agencies and potential Step 3 grantees should be encouraged to consider the development of appropriate provisions as soon as possible. For existing Step 3 projects that have not begun actual plant operations, grantees should be encouraged, where timing permits, to develop start-up service provisions prior to plant start-up. Under exceptional circumstances, consideration may be given to eligibility of start-up services for grant funded projects that have already begun operation but for which the Step 3 grant has not been closed out. However, reimbursement should not be made for start-up services completed prior to the effective date of this PRM unless specifically described in existing contract documents.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 2 9 1976

OFFICE OF WATER AND
HAZARDOUS MATERIALS

CONSTRUCTION GRANTS
PROGRAM REQUIREMENTS MEMORANDUM
PRM #77-3

SUBJECT: Plan of Operation for Municipal Wastewater Treatment Facilities

FROM: John T. Rhett, Deputy Assistant Administrator for Water Program Operations (WH-546)

TO: Regional Administrators I - X
Attn: Water Division Directors

PURPOSE

This memorandum provides guidance on preparing a Plan of Operation for municipal wastewater treatment facilities being constructed, modified, or expanded under the Construction Grants program.

DISCUSSION

Section 204(a)(4) of the Federal Water Pollution Control Act Amendments (PL 92-500) requires all municipal wastewater treatment facilities constructed with Federal funds to have a Plan of Operation. This memorandum contains guidance for the development of such a Plan. Additional details on this requirement can be found in 40 CFR 35.935-12 of the Federal Register.

A Plan of Operation is intended to identify specific actions and related completion dates to assure that the facility and all associated personnel are properly prepared for start-up and continued operation. Actions identified will be responsive to all technical and administrative requirements for efficient and reliable performance, including all such elements outlined in the Operation and Maintenance (O&M) Manual. A Plan of Operation is not intended to supplant the O&M Manual, which provides long-term guidance for efficient facility operation and maintenance, but rather summarizes the actions necessary to assure that all steps required

for start-up and operation are taken at the appropriate times. The Plan of Operation provides detail on such matters as who will perform the necessary tasks, when and how they will be undertaken, and, where necessary, the nature of each task. For example, the O&M Manual will indicate the staffing and personnel training needs for the facility; the Plan of Operation will contain the actual schedule to be followed for hiring and/or training those personnel.

POLICY

Plans of Operation must be submitted and approved to meet requirements of Section 204(a)(4) of PL 92-500 and 40 CFR 35.935-12. Content of the Plans of Operation and timing for completion and submittal should follow the guidance of this Memorandum and the attachments thereto. The Plan of Operation shall provide a concise, sequential description of, and implementation schedule for, those activities necessary to assure cost-effective, efficient and reliable start-up and continued operation of the facility. The cost of preparing a Plan of Operation is grant eligible and should be identified as a separate line item in the project costs.

IMPLEMENTATION

Municipal wastewater treatment facility construction projects vary considerably in size and complexity, and the degree of detail in a Plan of Operation should reflect this variation. The Plan of Operation must be tailored to the specific needs of each individual project. The basic guidance document for the development of a Plan of Operation is Federal Guidelines - Operation and Maintenance of Wastewater Treatment Facilities, published by EPA in August 1974. Application of this guidance to the development of a Plan of Operation is discussed in Attachment "A" to this PRM entitled "Basic Considerations in the Development of a Plan of Operation for Wastewater Treatment Plants."

A "sample" Plan of Operation is presented in Attachment B. This sample illustrates one format for a Plan. The action items shown are not all-inclusive, nor does each of these items necessarily apply to every project. An alternative format would be a time based chart that displays graphically the time span over which items would be completed. In this case appropriate narrative should be included to provide a full understanding of each area of activity. Reference to the O&M manual should be utilized whenever possible to avoid duplication.

Hereafter, grantees should submit a preliminary Plan of Operation along with the construction plans and specifications. This preliminary Plan of Operation should be reviewed by the State Water Pollution Control Agency concurrently with the review of project plans and specifications. If the plan is incomplete or in need of corrections, resolution should be accomplished in the same way that problems encountered in the processing of plans and specifications are now resolved. Certain information needed to complete a Plan of Operation, particularly the timing for implementing certain items, will not be known until the construction phase of the

project is underway. In a preliminary Plan, therefore, it may be necessary to define implementation schedules either in terms of an estimated percent of completion of construction, or in terms of a certain number of days before an operational start date. In fact, it may not be possible to identify all necessary actions related to operations in the preliminary Plan, although it should be as complete as possible.

It is not required to amend existing Step 2 and Step 3 grants to provide for preparing a preliminary Plan of Operation.

After construction of the project has begun, the preliminary Plan must be updated. A final Plan of Operation should be completed, submitted, and approved not later than the date by which the 50% grant payment of a Step 3 grant is made. It then will be available to the chief operator, who should be on board by that time. In that way, the Plan can serve as a guide to adequately prepare for proper start-up and operation of the treatment facility.

REFERENCES

PL 92-500, Section 204(a)(4)
40 CFR 35.935-12

ATTACHMENT A
to PRM #77-3

Basic Considerations in the Development of a Plan of Operation
for Wastewater Treatment Facilities

A Plan of Operation for a new or expanded wastewater treatment facility should provide an action plan and implementation schedule to assure that all necessary actions to properly prepare for facility start-up and continued operation are accomplished in a timely fashion. The basic guidance document for the development of a Plan of Operation is Federal Guidelines - Operation and Maintenance of Wastewater Treatment Facilities, published by the EPA in August 1974. Some of the guidance needed to implement the Plan of Operation may be contained in the Operation and Maintenance (O&M) Manual prepared for the facility. Appropriate reference in the Plan of Operation to elements of the O&M Manual may suffice for describing many specific actions. However, at a minimum the Plan of Operation must identify actions necessary to commence operations and contain an implementation schedule for their accomplishment. It is suggested that a summary of the implementation schedule be compiled on a chronological basis. This will allow easy reference on a routine basis to assure that necessary actions are initiated and completed on schedule.

The following very briefly identifies the scope of each of the areas that might be included in a Plan of Operation. The referenced Section numbers in parentheses relate to appropriate sections in the Federal Guidelines identified above which contain more detailed information on each of the areas.

1. Staffing and Training (Section 2.0)
   This is a particularly important element in any plan of operation to assure that supervisory, operations, maintenance, laboratory support, and administration personnel are hired and trained in a timely manner. Sources of training should be identified whenever possible. Of particular importance is the need to have the Chief Operator on site by 50% completion of construction.

2. Records, Reports, and Laboratory Control (Section 3.0)
   The establishment of an adequate laboratory, recording, and reporting system should be identified, including the development of any special forms needed for reporting or process control requirements. Any special training needs related to a laboratory control program should be specified.

3. Process Control and Start-up Procedures
   Adequate consideration of plant start-up is essential to assure subsequent plant operation with a minimum of problems and to set the proper framework for long-term, trouble-free,

efficient plant operation under all operating conditions. The plan should identify necessary actions related to start-up, such as wet and dry testing of equipment, instrument calibration, and a review of process control procedures during the start-up period. (For additional guidance on plant start-up, see PRM #77-2).

4. Safety (Section 5.0)
Effective employee safety programs should be developed and appropriate training conducted in advance of start-up. Existing and projected state and local safety requirements should be complied with. All hazardous conditions should be appraised and appropriately considered in the inplant safety and health plan and the training program should be responsive to identified needs and guidance.

5. Emergency Operating Plan (Section 6.0)
A comprehensive contingency plan for emergency operations should be included in the plant O&M manual. This plan should be substantially implemented in advance of start-up. Appropriate instructions and specific response guidance should be issued in order to minimize the possibility of plant failures under all conditions that may occur. An effective emergency response plan requires advance training in order to be effective.

6. Maintenance Management (Section 7.0)
A schedule for developing and implementing a maintenance management system should be included. This should consider the need for training to operate the system and/or to deal with complex equipment maintenance problems. Additional considerations include personnel training, supplies of chemicals used in the treatment process or process control, laboratory supplies, the provision of necessary maintenance tools and spare parts inventory.

7. Operation and Maintenance Manual
The Plan of Operation should include sufficient lead-time for the submission and review of the plant O&M manual so as to ensure that the manual is approved by the State Water Pollution Control Agency at least 30 days prior to plant start-up. The Plan of Operation should also identify future date(s) for updating the manual in order to ensure that the most effective operational guidance is provided based upon actual operating experience.

8. Operations Budget (Section 9.0)
Any planning process must consider budgetary constraints on implementation and provide for a process for adequate budget controls. Consideration must be given to the development and

use of a user charge system; also to the availability of 10% of industrial cost recovery receipts for supporting O&M costs.

9. Other Elements
Other elements should be addressed as necessary to assure timely implementation of actions related to continued efficient and reliable operation of the facility. Actions and timing related to the development and implementation of sewer use ordinances, pretreatment ordinances, or other local rules or regulations should also be identified. Establishment of procedures for preparing an annual O&M report should be considered for staffing, training, budget planning, maintenance, and future construction planning purposes.

The following guidance is suggested for determining the adequacy of preliminary Plans of Operation:

1. Descriptions and scheduling for elements 2-5 and 7 (above) should be essentially complete in the preliminary Plan of Operation. The staffing plan of element 1 (above) should also be complete, but the training plan may be tentative.

2. Descriptions and scheduling for elements 6, 8 and 9 (above) may be tentative in the preliminary Plan of Operation.

ATTACHMENT B
to PRM #77-3

Sample

Final Plan of Operation

Preface

Note that this "preface" is purely for descriptive purposes in setting the stage for this example of a Plan of Operation. It would not normally be included in an actual Plan.

The following material presents one example of a final Plan of Operation prepared in conjunction with the construction of a new or expanded wastewater treatment facility. This example is based upon a hypothetical situation of a new wastewater treatment facility being constructed for the City of Smithville, Pa. Smithville is a medium sized bedroom community near a large metropolitan area and has an existing secondary treatment facility. The new "Westside Wastewater Treatment Facility" is being constructed to provide treatment of wastes from a previously unsewered area recently annexed by the City, an industrial park constructed for light manufacturing industry, and housing in the same general area, and to provide treatment of some wastes from the presently overloaded facilities.

The existing facility will continue to provide treatment to the older part of Smithville. The new facility is in a size range of 5-10 mgd. The project has followed a normal procedure under the construction grant program of PL 92-500. A "preliminary" Plan of Operation would be submitted with the plans and specifications at the completion of the Step 2 facility design stage. It would differ from this example of a "final" Plan of Operation in that specific dates would not be shown because a construction timeframe has not been established. Instead, implementation could be shown either as an estimate of the percent completion of construction, or as a certain number of days before an operational start date. Also, it may not be possible to identify all necessary actions related to operations in the preliminary Plan, although it should be as complete as possible.

This example Plan of Operation is not intended as a rigid guide. Obviously, the size, complexity, and type of facility, as well as other factors, such as whether the facility is new or an expansion or modification of an existing facility, will influence the extent of information required in the Plan of Operation. It is important, however, that each of the areas illustrated in the example be considered in the Plan of Operation for any project to assure that all potential needs have been addressed. As can be seen, the intent of the Plan of Operation is clearly to provide a simple, straightforward means of identification of an implementation plan for those action items essential to successful start-up and continued operation of the treatment facility.

Introduction

This plan of operation provides an identification of needed actions and an implementation schedule for their completion tc assure timely start-up and efficient operation of the new Westside Wastewater Treatment Facility now under construction in the City of Smithville, Pa. Construction of this facility began in May 1975 and is scheduled to be complete in June 1978. Adherence to the schedule contained in this Plan of Operation will help assure that start-up of the facility can be accomplished in a timely and efficient manner.

Many of the details related to necessary actions identified in this plan of operation are fully discussed in the Operation and Maintenance Manual being prepared for this facility. Reference to sections of that manual are included where appropriate to avoid repetition. A copy of the draft O&M manual is provided with this plan to provide necessary back-up information.

1. Summary of Implementation Dates

The implementation dates of the following sections are arrayed below in chronological order to allow rapid identification of action items and related completion dates. Frequent reference to this listing will help avoid the possibility of omission or slippage of key actions necessary for successful plant start-up and continued operation.

Date	Action	Plan of Operation Section Reference
May 1975	Start construction of treatment facility	
July 1975	Promulgate new sewer use ordinance to accomodate industrial discharges	10(a)
	Promulgate industrial pretreatment ordinance	10(b)
June 1976	FY 77 pre-start-up budget considerations	9
January 1977	Superintendent (Chief Operator) on Board	2(a)
	Complete draft of O&M Manual	8(a)
	Review of user charge and industrial cost recovery systems	9
June 1977	Senior Operator on Board	2(b)
	Chief Chemist on Board	2(c)
	FY 78 budget consideration for initial operation	9
August 1977	Begin influent sampling program	4(a)
	Begin development of detailed emergency procedures plan	6(a)
Sept. 1977	Begin development of detailed guidance on employee safety and related training program	5(a)
October 1977	Staff training schedule finalized and approved by State	2
January 1978	Begin development of action plan for process control and "fine tuning"	4(b)
	Begin finalization of cooperative agreements with other agencies	6(b)
	Begin specialized training on incinerator O&M	7(b)
February 1978	Shift Operators on Board	2(d)
	Complete details of emergency procedures plan	6(a)

Date	Action	Plan of Operation Section Reference
February 1978 (continued)	Begin provision of laboratory supply inventory	3(b)
	Begin finalization of system and procedures for notification of unusual industrial waste discharges	4(d)
	Begin employee training in emergency procedures	6(c)
	Begin training of plant personnel on maintenance procedures	7(f)
	Finalize O&M Manual	8(b)
March 1978	Complete detailed guidance on employee safety and related training program	5(a)
	Finalize cooperative assistance agreements with other agencies	6(b)
	Start review of laboratory analytical and reporting requirements with operators and laboratory staff	3(a)
	Complete development of action plan for process control and "fine tuning"	4(b)
	Start safety training program	5(b)
	Begin debugging of maintenance management system computer software	7(c)
April 1978	Complete review of laboratory analytical and reporting requirements with plant staff	3(a)
	Complete inventory of laboratory supplies	3(b)
	Complete employee training in emergency procedures	6(c)
	Complete spare parts inventory	7(a)
	Complete specialized training on incinerator O&M	7(b)
	Start review of process control and detailed start-up procedure with plant staff	4(c)
	Begin training on maintenance management system usage	7(d)
	O&M Manual approved	8(c)
May 1978	Complete debugging of maintenance management system computer software	7(c)
	Complete training on maintenance management system usage	7(d)
	Begin pre-start up maintenance schedule	7(e)
	Maintenance crew on Board	2(e)

Date	Action	Plan of Operation Section Reference
May 1978 (continued)	Complete training in heavy metals analysis	3(c)
	Treatment facility design, construction, operations records, and as built plans completed and on file	3(d)
	Complete review of process control and detailed start-up procedures with plant staff	4(c)
	Complete influent sampling program	4(a)
	Finalize system and procedures for notification of unusual industrial waste discharges	4(d)
	Complete safety training program	5(b)
June 1978	Complete wet and dry testing of all equipment	4(e)
	Complete construction of treatment facility (Facility ready for operation)	
	Start periodic safety reviews with staff	5(c)
	Complete training of plant personnel on maintenance procedures	7(f)
June 1979	Conduct first annual plant safety review and modify safety program, if necessary	5(d)
	Initiate annual emergency procedures update and employee training program	6(d)
	Update O&M Manual	8(d)
	Complete first annual treatment system O&M report	10(c)

2. Staffing and Training

The recommended staffing complement and a suggested organizational chart is included in Section ___ of the O&M manual. In accordance with EPA guidelines, the chief operator of the facility should be on board at the 50% completion point of the construction phase of the project. The City has been notified of this requirement, and recruitment actions will begin soon.

In order to assure adequate time for familiarization with the new facility and to adequately prepare for start-up, the staff of the facility should be hired in accordance with the following schedule:

a. Superintendent (Chief Operator) on Board- January 1977
b. Senior Operator on Board- June 1977
c. Chief Chemist on Board- June 1977
d. Shift Operators on Board- February 1978
e. Maintenance Crew on Board- May 1978

As each of the personnel are located and hired, training needs must be identified in cooperation with the State Water Pollution Control Agency. A training schedule should be finalized no later than October 1977. It is anticipated that additional training in activated sludge process control will be needed for this new facility and consideration should be given to the training courses available through the Smith County Community College.

Certain specialized training needs have been identified for this new facility and are discussed as appropriate in other sections of this plan.

3. Records, Reports and Laboratory Control

Examples of daily log sheets, State reporting forms, and self-monitoring report forms to comply with NPDES permit requirements are included in Section ___ of the O&M manual. No special reporting requirements have been identified; however, certain heavy metals analysis must be included due to anticipated discharges from the Westside Industrial Park to be served by this facility.

		Start date	Completion date
a.	Conduct review of laboratory analytical and reporting requirements with operators and laboratory staff	March 1978	April 1978
b.	Provide inventory of laboratory supplies	Feb. 1978	April 1978
c.	Complete training in heavy metals analysis (identify source of training)		May 1978
d.	Treatment facility design, construction, operation records, and as built plans completed and on file in superintendent's office		May 1978

4. Process Control and Start-up Procedures

Process control and start-up procedures are detailed in Sections ___ and ___, respectively, of the O&M manual. Implementation of the actions identified in those sections should occur in accordance with the following schedule:

		Start date	Completion date
a.	Begin sampling program to define plant influent characteristics	August 1977	May 1978

		Start Date	Completion Date
b.	Develop action plan for process control and "fine tuning"	Jan. 1978	March 1978
c.	Review process control and detailed start-up procedures with plant operations and laboratory staff	April 1978	May 1978
d.	Finalize system and procedures for notification of unusual industrial waste discharges	Feb. 1978	May 1978
e.	Complete wet and dry testing of all equipment		June 1978

5. Safety

The need and specifics of a safety program for this facility are detailed in Section ___ of the O&M manual. Activities related to safety should be implemented in accordance with the following schedule:

		Start Date	Completion Date
a.	Develop detailed guidance on employee safety and related training program	Sept. 1977	March 1978
b.	Conduct training program for all plant staff prior to start-up	March 1978	May 1978
c.	Start periodic safety reviews with staff		June 1978
d.	Conduct first annual plant safety review and modify safety program if necessary		June 1979

6. Emergency Operating Plan

Detailed emergency operating procedures are outlined in Section ___ of the O&M manual. To assure success of these procedures during an emergency, the following actions should be taken:

		Start Date	Completion Date
a.	Develop details of emergency procedures plan including personnel assignments	August 1977	February 1978
b.	Finalize cooperative assistance agreements with other agencies	Jan. 1978	March 1978

		Start Date	Completion Date
c.	Pre-start-up employee training	Feb. 1978	April 1978
d.	Initiate annual procedures update and employee training program		June 1979

7. Maintenance Management

The maintenance management system for this facility is outlined in Section ___ of the O&M manual. The maintenance management system will utilize the City's computer capability to provide routine scheduling of preventive maintenance activities, spare parts inventory control, and records of running time and reliability of performance. To successfully implement this maintenance management system, the following actions must be taken:

		Start Date	Completion Date
a.	Complete spare parts inventory including necessary tools		April 1978
b.	Conduct specialized training on incinerator operation and maintenance by equipment supplier	Jan. 1978	April 1978
c.	Debugging of computer software by subcontractor	March 1978	May 1978
d.	Conduct training on system usage by subcontractor	April 1978	May 1978
e.	Begin pre-start-up maintenance schedule		May 1978
f.	Provide training of plant personnel on maintenance procedures	Feb. 1978	June 1978

8. Operation and Maintenance Manual

The operation and maintenance manual should be drafted, finalized, approved, and updated in accordance with the following schedule:

a.	Drafted	January 1977
b.	Finalized	February 1978
c.	Approved	April 1978
d.	Updated based on first year of operating experience	June 1979

9. Operations Budget

This facility is scheduled to begin operation in June 1978. Since the hiring and training of personnel should begin in January 1977,

appropriate considerations of related costs must be provided in the City's FY 77 budget. Consideration of pre-start-up and full operation costs must be reflected in the City's FY 78 budget with the first full year of operation being FY 79. The City's user charge system and rate structure should be reviewed by January 1977 to assure an adequate base to provide needed operating and maintenance revenues.

10. Other Elements

The new Westside Wastewater Treatment Facility satisfies needs of the City of Smithville that will require responsive actions. To complete pre-start-up and post-operative actions that will assure continued operational success, the following actions must also be taken in addition to those previously identified:

a.	Promulgate new sewer use ordinance to accomodate industrial discharges-	July 1975
b.	Promulgate industrial pretreatment ordinance-	July 1975
c.	Complete first annual treatment system O&M report including recommendations on budget, staffing, training, maintenance and repairs, and future needs.	June 1979

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 3 1976

CONSTRUCTION GRANTS
Program Requirements Memorandum
No. PRM # 77-4

SUBJECT: Cost Allocations for Multiple Purpose Projects

FROM: John T. Rhett, Deputy Assistant Administrator for Water Program Operations (WH-546)

TO: Regional Administrators, Regions I-X

ATTN: Water Division Directors

I. PURPOSE

The purpose of this memorandum is to present information intended to assist you in preparing and reviewing cost allocations for multiple-purpose (e.g. pollution control-flood control and pollution control-municipal solid waste) projects. Examples of such multiple-purpose projects include combined sewer overflow projects that also reduce flooding and enhance urban drainage and co-incineration projects.

II. DISCUSSION

A number of Regions have raised questions regarding procedures for determining the share of multiple purpose project cost assignable to the pollution control purpose.

The cost allocation is to distribute project costs among the purposes served so that each purpose shares equitably in the savings resulting from multiple purpose construction. The Alternative Justifiable Expenditure (AJE) method, a simplied version of the Separable Costs Remaining-Benefits method, is generally the most appropriate cost allocation approach for the types of projects likely to be developed under the construction grants program. Enclosed is a description of the AJE method and a simplified example of its use.

We are currently preparing a technical bulletin providing further information on examples of cost allocations for various types of multiple-purpose projects likely to be proposed for construction grant funding.

III. POLICY

As required in PRM No. 75-34 (PGM No. 61) costs of a multiple purpose project to be construction grant funded shall be allocated among purposes. The total costs allowable for construction grant funding shall not exceed that allocated to the pollution control purpose. The pollution control allocation shall:

(1) be determined by the AJE method except where unusual circumstances warrant use of other methods.

(2) in no case, exceed the cost of the least cost single-purpose pollution control alternative.

IV. IMPLEMENTATION

The enclosed information should be provided to those grantees and consultants involved with combined sewer overflow or other types of multiple-purpose projects. To provide necessary technical assistance to the consultants and to expedite review of multiple-purpose plans submitted to EPA for grant funding, it would be desirable for each Region to assign one or two engineers to cost allocation analysis. Through such specialization, proficiency could be increased.

The Facility Requirements Branch is ready to provide assistance when requested.

V. REFERENCES

1. PRM No. 75-34 (PGM No. 61) Grants for Treatment and Control of Combined Sewer Overflows and Stormwater Discharges, December 16, 1975.

2. House Committee Print No. 23, 82 Congress, Second Session, December 5, 1952, "The Allocation of Costs of Federal Water Resources Development Projects."

3. "Proposed Practices for Economic Analysis of River Basin Projects," Government Printing Office, Washington, D.C. 1958.

4. Water Resources Engineering, Ray K. Linsley and Joseph B. Franzini, McGraw-Hill Book Company, New York, 1964, pp. 625-6, Section 21-11, Cost Allocation for Multiple-Purpose Projects, Separable Costs Remaining-Benefits Method and Alternative Justifiable-Expenditure Method.

Enclosures

THE ALTERNATIVE JUSTIFIABLE EXPENDITURE METHOD

The alternative justifiable expenditure method is fundamentally based on the justified investment for each function. That justified investment is taken to be the cost of the most economical alternative single-purpose project which will achieve substantially the same benefits as does that function in the multiple-purpose project. That investment, sometimes called the alternative justifiable investment, represents the largest amount which could justifiably be expended on the function in the multiple-purpose project, for, in most instances, no more should be spent on a purpose than the cost of producing those benefits from the least expensive alternative source.

The cost allocation steps are:

1. Estimate the costs of most cost-effective single-purpose projects to obtain the same objectives as those of the multiple purpose project.

2. Determine the respective specific costs of each purpose in the multiple purpose project. The specific costs of a purpose are the sum of costs assignable to each project component exclusively serving that single purpose. An example of a specific cost would be the cost of a treatment plant included in a project designed to improve urban drainage and reduce pollution from combined sewer overflows.

3. Deduct the specific cost of each purpose in the multiple-purpose project from the single-purpose project cost.

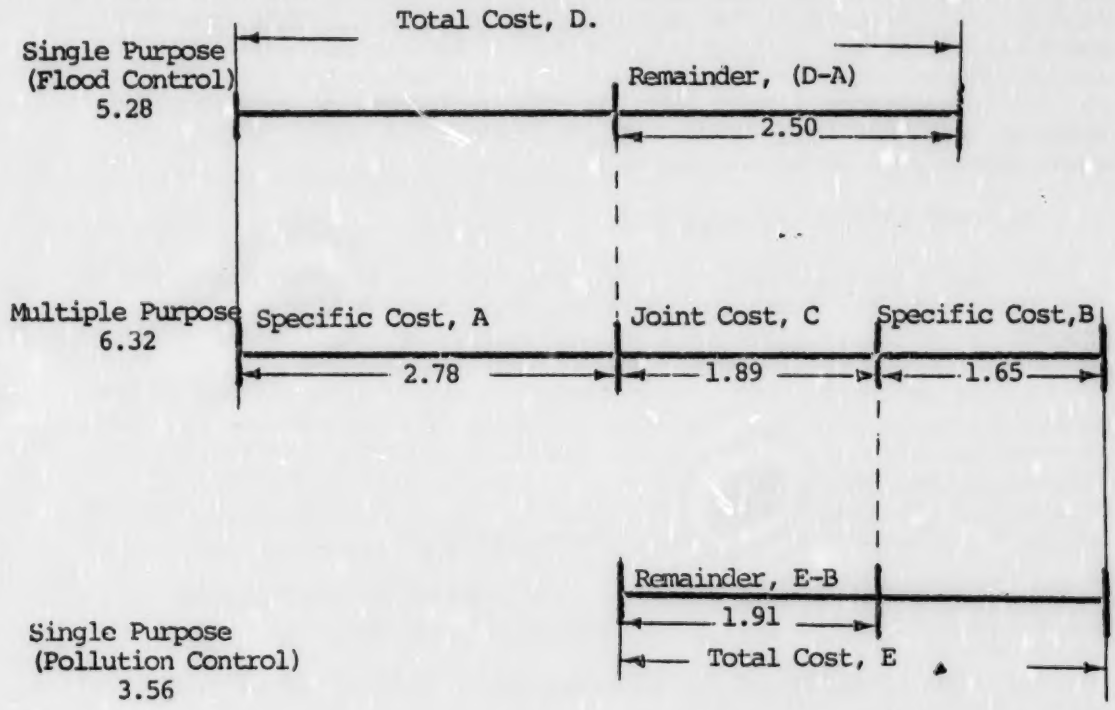
4. From total cost of multiple-purpose project deduct all specific costs to determine joint costs.

5. Distribute joint costs of the multiple-purpose project among purposes in direct proportion to the remainders found in Step 3.

6. To obtain allocated costs for each purpose, add the specific and the distributed joint costs for each purpose.

It should be noted that none of the purposes will be assigned costs which are greater than the cost of the most cost-effective single purpose project nor less than the specific cost of the purpose.

ALTERNATIVE JUSTIFIABLE EXPENDITURE METHOD
COST ALLOCATION EXAMPLE
(AVERAGE ANNUAL EQUIVALENT COSTS - MILLIONS OF DOLLARS)



$$\text{Flood Control Allocation} = A + \frac{D-A}{(D-A)+(E-B)} \times C$$

$$= 2.78 + \frac{2.50}{2.50+1.91} \times 1.89$$

$$= 3.85$$

$$\text{Pollution Control Allocation} = B + \frac{E-B}{(D-A)+(E-B)} \times C$$

$$= 1.65 + \frac{1.91}{2.50+1.91} \times 1.89$$

$$= 2.47$$

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 15 1976

PROGRAM REQUIREMENTS MEMORANDUM
PRM #77 - 5

SUBJECT: Grant Eligibility of Land Acquisition by Leaseholds or Easements for Use in Land Treatment and Ultimate Disposal of Residues

FROM: Russell E. Train
Administrator

TO: Regional Administrators, I - X

PURPOSE:

This memorandum provides guidance for the interpretation of the construction grants regulations concerning grant eligibility of land acquired by leasing or easements for use in land treatment and sludge disposal.

DISCUSSION:

The Agency has conducted an intensive study over several months to determine if land acquisition by lease or easement should be grant eligible where the land would be an integral part of the treatment process or required for the ultimate disposal of residues resulting from wastewater treatment. The study concluded that under unusual circumstances land acquisition by lease or easement will be more cost-effective than fee simple purchase. Use of grant funds for acquisition by lease or easement is legal where cost-effective. Serious risks exist, however, including the possibility that the lease will be prematurely terminated by the lessee; that the conditions of the lease or easement will be broken; that funds for payments will be misappropriated; and that renewal will be prohibitively expensive or impossible.

It has been roughly estimated that leasing/easements will be cost-effective only for several hundred projects nationwide. Most of these projects would be in arid or semi-arid areas where effluent has a high value and land has a low value. In these areas, some landowners

may be willing to pay for wastewater effluents, accept wastewater effluents free of charge or make leasing arrangements at a nominal charge.

Leasing for substantial fees would seldom be cost-effective. Normally, such cases would be limited to situations where landowners are willing to lease for total payment equivalent to less than fair market value.

POLICY:

The cost of leasing or of obtaining an easement on land for land treatment or for ultimate disposal of residues from the wastewater treatment process is eligible for Federal grant assistance when otherwise in conformance with the requirements of Program Guidance Memoranda 49 and 67, and of this memorandum. The PGM provisions restricting eligibility to fee simple purchase are hereby superseded.

Prior to execution of a lease or an easement for land acquisition, the grantee shall obtain written approval from the Agency of the conditions for the lease or easement in order for the costs to be allowable for Federal funding. These conditions shall:

1. Limit the purpose of the lease or easement to land application (land treatment or sludge disposal) and activities incident to land application. (A provision for sub-leasing or licensing for purposes consistent with the use of land for application purposes may be included).

2. Describe explicitly the property use desired.

3. Waive the landowner's right to restoration of the property at the termination of the lease/easement.

4. Provide for payment of the lease/easement in a lump sum for the full value of the entire term (See item 6 below).

5. Recognizing the serious risk of premature lease termination, provide for full recovery of damages by the grantee in such an event with recovery of the paid Federal share or, alternatively, retention of the Federal share to be used solely for the eligible costs of the expansion or modification of the treatment works associated with the project. The damages would include the difference between the total present worth of costs of treatment works changes resulting from premature termination and the costs otherwise resulting from normal expiration of the lease. The damages would also include any additional losses or costs due to unplanned disruption of wastewater treatment.

6. Provide for leases/easements for a minimum of twenty (20) years, or the useful life of the treatment plant, whichever is longer, with an option of renewal for an additional term, as deemed appropriate.

Whenever leasing is to be recommended, steps shall be taken to insure that the required lands will be available when needed at the price and terms presented in the facility plan. The facility plan shall include a copy of the proposed leasing agreement and letters of intent to comply with such agreement from the concerned landowners. The Step 2 grant shall contain a condition precluding commencement of Step 2 design work until the grantee has purchased options to lease in accordance with the terms of the proposed leasing agreement.

The grantee must take special precautions to avoid actions which might be construed as a breach of the lease agreement. Land must be used as agreed upon in the lease/easement. Any payments (which would not be grant eligible) required for quantity of effluent or sludge applied should be paid promptly.

Leasing of required lands may be approved only where less costly than outright purchase of the lands as determined by a cost comparison for each case. Such comparison must demonstrate that the total present worth cost of the lease payments plus expected net income accruing to the landowner from retained uses of the land over 20 years will be less than an amount representing the market price for fee simple purchase minus the present worth of the land salvage value 20 years hence. The cost comparison must comply with the interest rate, planning period, and salvage value requirements of the Cost Effectiveness Analysis Guidelines (Appendix A of the Construction Grant Regulations).

Where water and/or nutrients are of value, leasing fees should be minimal or sale/donation of effluents to nearby agriculture or recreation activities should be possible without Federal grants for land purchase or leasing.

IMPLEMENTING PROCEDURE:

Each Region shall notify states of this PRM and take actions to assure that grantees meet all the conditions set forth by this memorandum when acquiring land by lease or easement.

REFERENCES:

Program Guidance Memorandum No. 49 of July 18, 1975 (PRM 75-25)
Program Guidance Memorandum No. 67 of April 2, 1976 (PRM 75-39)
40 CFR 35.940-3
40 CFR 4.600 et seq
40 CFR 30.810 et seq
Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (P.L. 91-646) 42 USC Section 4651 et seq.

Memoranda		Former Designation
PRM 75-36	Value Engineering in the EPA Construction Grants Program	PG-63
PRM 75-37	User Charge System: Plan and Schedule	PG-65
PRM 75-38	Relationship Between 201 Facility Planning and Water Quality Management (WQM) Planning	PG-66
PRM 75-39	Eligibility of Land Acquisition Costs for the Ultimate Disposal of Residues from Wastewater Treatment Processes	PG-67
PRM 75-40	Priority List Supplement to FY 1977 Construction Grants Guidance	PG-68
PRM 76-1	Construction Grants Program Issuances	
PRM 76-2	Cancellation of Certain Program Guidance Memoranda (PGM)	
PRM 76-3	Presentation of Local Government Costs of Wastewater Treatment Works in Facility Plans	
PRM 76-4	Coordination of Construction Grants Program with EPA-Corps of Engineers Section 404/Section 10 Permit Programs	
PRM 76-5	Flood Insurance Requirements	
PRM 77-1	Treatment Works for Recreational Parks, Industrial Parks, and Institutions	
PRM 77-2	Grant Eligibility of Start-up Services	
PRM 77-3	Plan of Operation for Municipal Wastewater Treatment Facilities	
PRM 77-4	Cost Allocations for Multiple Purpose Projects	
PRM 77-5	Grant Eligibility of Land Acquisition by Leasehold or Easements for Use in Land Treatment and Ultimate Disposal of Residues	

★ U.S. Government Printing Office: 1977-778-378/113 Region 8